

Notice of Allowability

Application No.

10/827,352

Examiner

Michael Kornakov

Applicant(s)

MATSUNO ET AL.

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1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04/05/2005.
2. ☒ The allowed claim(s) is/are 21 and 24-31.
3. ☒ The drawings filed on 20 April 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/742,423.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 05/24/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. A. Yamazaki, esq., on 06/06/2005.

The application has been amended as follows:

Cancel claims 2, 22, 23, 32-34

In claim 21 after the words "a plurality of feed lines configured to feed the at least one liquid to said plurality of cells, respectively" insert ---, wherein said nozzle unit further comprises an ultrasonic wave generator configured to apply ultrasonic waves to the at least one liquid, and said plurality of cells comprises at least one flow channel for ozone water, at least one flow channel for hydrogen water and at least one flow channel for ozone-hydrogen water, connected to respective feed lines, and said at least one flow channel for ozone water is shielded from the ultrasonic waves---.

In claim 31 replace the number "22" after the words "according to claim" by the number ---21---

In the specification on page 1 after the heading insert the following paragraph:
---This application is a division from U.S. application serial No. 09/742,423, dated 12/22/2000, now U.S. Patent 6,743,301.

Replace the current abstract with the following:

---A substrate treatment apparatus comprises a treatment vessel, a substrate holder for rotating the substrate in a horizontal plane in the treatment vessel, a nozzle unit arranged in an upper part of the treatment vessel such that a liquid is downwardly fed, a feed line for feeding the liquid to the nozzle unit, and a chamber enclosing therein the apparatus in its entirety. The nozzle unit is constructed in a form of a bar such that as viewed in plan, the liquid ejected from the nozzle unit reaches the substrate with an area range having a length not smaller than a diameter of the substrate and a width smaller than the diameter of the substrate---.

Response to Applicants' amendment

2. All previous rejections have been overcome by the amendment, filed 04/05/2005 in combination with the Examiner's amendment and the said rejections are withdrawn. The list of related cases, submitted on 05/24/2005 is acknowledged.

Allowable Claims

3. Claims 21, 24-31 are allowable over the prior art of record.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance: the closest prior art of record is U.S. 6,035,871 to Eui-Yeol. Eui-Yeol teaches an apparatus for treating semiconductor substrates with ozonated and hydrogenated water. The

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apparatus of Eui-Yeol comprises a number of structural elements, similar to those instantly claimed, including a holder for rotatably holding the substrate, bar like nozzles for supplying ozonated water and hydrogenated water to the substrate, a feed line configured to supply cleaning solutions to respective nozzles. The teaching of Eui-Yeol does not anticipate or suggest fairly the nozzle unit structure having an ultrasonic wave generator and a plurality of flow channels, including at least one flow channel for ozone water, at least one flow channel for hydrogen water and at least one flow channel for ozone-hydrogen water, connected to respective feed lines, wherein said at least one flow channel for ozone water is shielded from the ultrasonic waves.

Upon further search no other prior art that anticipates or suggests fairly the apparatus for treating substrates with ozonated water and hydrogenated water comprising the combination of structural elements as instantly claimed has been located as of the date of this office action. Therefore, claims 21, 24-31 are allowed over the prior art of record.

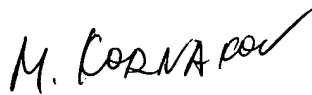
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "M. Kornakov", with a stylized flourish at the end.

Michael Kornakov
Primary Examiner
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06/06/2005